## **ABSTRACT**

The invention relates to a quasi-interpenetrating network of polymer chains, the chains comprising linear polyacrylamide (LPA) chains in the form of a main frame having a weight average molecular weight of approximately 0.05 million to approximately 25 million g/mole, and a radius of gyration of approximately 10 nm to 350 nm; and polydimethylacrylamide (PDMA) chains prepared by polymerizing PDMA in the presence of the LPA main frame, wherein the LPA and PDMA chains are entangled within one another and interpenetrate one another, and wherein the quasi-interpenetrating network has substantially no chemical cross-linking.

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